

# *—Standard Valves—*

4304-B Valve  
-BB Valve

## 4304-B AND 4304-BB VALVES

TRIODES.

### SPECIFICATION.

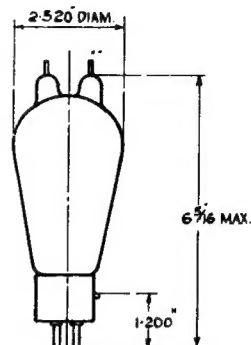
#### Cathode.

Thoriated Tungsten filament.  
Constant voltage type.

#### Base.

4304-B—American medium 4-pin bayonet  
4304-BB—Standard British 4-pin.

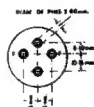
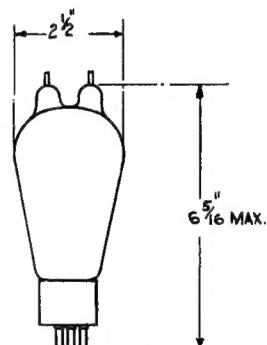
Control grid and anode brought out separately at top of bulb.



4304-B

#### Dimensions.

	4304-B	4304-BB
Overall length	$6\frac{7}{8}''$ (17.5 cms.)	$6\frac{7}{8}''$ (17.5 cms.)
Diameter	$2\frac{7}{16}''$ (6.2 cms.)	$2\frac{1}{2}''$ (6.4 cms.)
Net weight	0.15 lbs. (70 gms.)	0.15 lbs. (70 gms.)



4304-BB

#### Constants.

Filament voltage	7.5 volts
Nominal filament current	3.25 amps.
Total emission	1 amp.
Amplification factor	11
Impedance	5,500 ohms
Grid-anode capacity	2.5 $\mu\mu\text{F}$ .
Anode-filament capacity	0.7 $\mu\mu\text{F}$ .
Grid-filament capacity	2.0 $\mu\mu\text{F}$ .

### LIMITING CONDITIONS FOR SAFE OPERATION.

Maximum direct anode voltage	1,250 volts
Maximum direct anode current	0.100 amps.
Maximum anode dissipation	50 watts
Maximum direct grid current	0.025 amps.
Maximum frequency for above ratings	100 Mc.
Maximum anode voltage for frequency of 300 Mc.	750 volts

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## **TYPICAL OPERATING CONDITIONS.**

### **RADIO FREQUENCY OPERATION.**

	Class B Telephony		Class C Telephony		Class C Telegraphy		
	Modulated Carrier applied to grid		Subject to anode modulation		Unmodulated		
Direct anode voltage	1,250	1,000	1,000	750	1,250	1,000	volts
Grid bias	—110	—85	—180	—135	—180	—135	to
					—225	—180	volts
Direct anode current	0.060	0.060	0.100	0.100	0.100	0.100	amps.
Carrier output	25	20	65	50	85	65	watts
Anode dissipation	50	40	35	25	40	35	watts

### **Ultra High Frequency Operation.**

For frequencies above 100 megacycles, the maximum plate voltage must be reduced as follows :—

Frequency                      100      150      200      250      300    megacycles.

#### **Anode Voltage :—**

Class B Amplifier              1,250    1,125    1,000      875      750    volts

Class C Oscillator or  
Amplifier—unmodulated    1,250    1,125    1,000      875      750    volts

Class C Oscillator or  
Amplifier—anode  
modulated                      1,000      900      800      700      600    volts

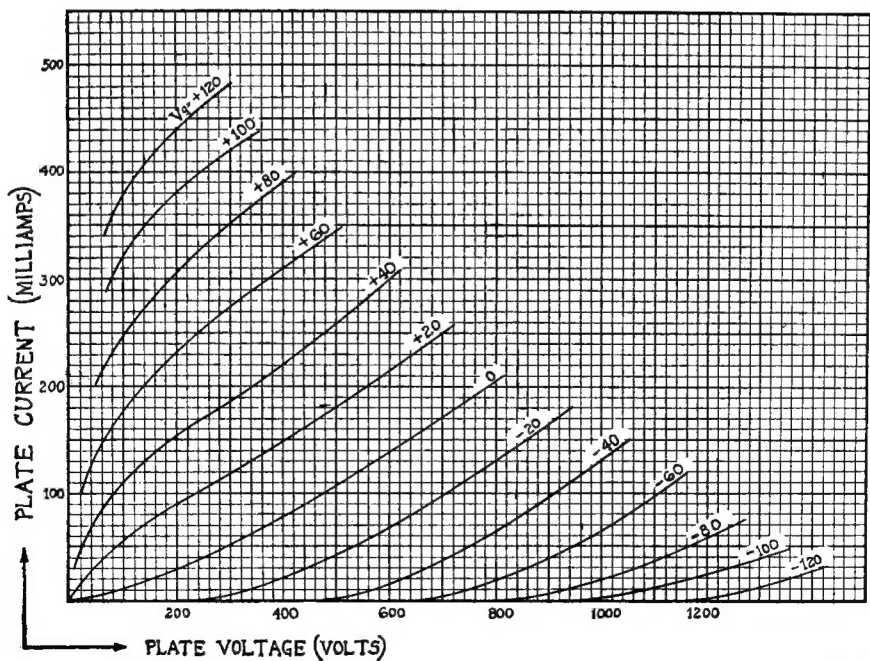
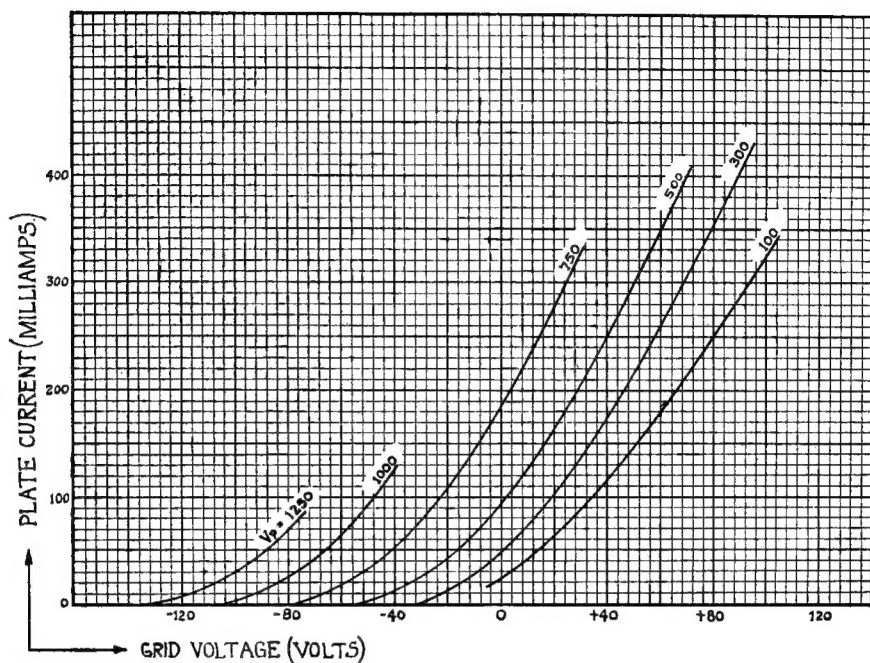
Nominal power obtainable in a load for Class C unmodulated operation is approximately as follows :—

Frequency                      100                      200                      300    megacycles  
Anode voltage                  1,250                      1,000                      750    volts  
Power output                      60                      35                      13    watts  
Efficiency                          48                      35                      17    per cent.

Limit of oscillation, approximately 400 Mc.

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